

Attorney Docket No. ~~IMMR~~007/01US**PATENT****IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of MOORE et al.

Serial No.: 09/965,097

Examiner: Xiao M. Wu

Confirmation No.: 7204

Art Unit: 2673

Filed: September 28, 2001

For: **DEVICE AND ASSEMBLY FOR PROVIDING LINEAR TACTILE SENSATIONS**

U.S. Patent and Trademark Office  
 220 20<sup>th</sup> Street S.  
 Customer Window, Mail Stop Amendment  
 Crystal Plaza Two, Lobby, Room 1B03  
 Arlington, VA 22202

**INFORMATION DISCLOSURE STATEMENT TRANSMITTAL**

Enclosed is an Information Disclosure Statement and accompanying Form PTO/SB/08A for the above-identified patent application.

- In accordance with 37 C.F.R. §1.97(b), no additional fee for submission of the IDS is required.
- In accordance with 37 C.F.R. §1.97(c), also enclosed is:
  - the fee of \$180.00 as set forth in 37 C.F.R. §1.17(p); or
  - a statement as specified in 37 C.F.R. §1.97(e).
- In accordance with 37 C.F.R. §1.97(d), a statement as specified in 37 C.F.R. § 1.97(e) and the fee of \$180.00 as set forth in 37 C.F.R. §1.17(p) are also enclosed.
- Check in the amount of \$ 180.00 the total fee is attached.
- A return receipt postcard is also enclosed.
- Please charge \$ \_\_\_\_\_ to Deposit Account No. 50-1283 for the IDS fee as indicated on the Transmittal of Documents submitted herewith.

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Serial No. 09/965,097  
Page 2

The Commissioner is hereby authorized to charge any appropriate fees under 37 C.F.R. §§1.16, 1.17, and 1.21 that may be required by this paper, and to credit any overpayment, to Deposit Account No. 50-1283.

Dated: August 30, 2004

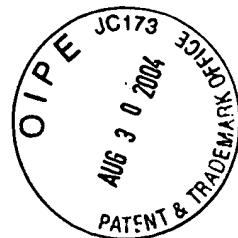
Cooley Godward LLP  
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Respectfully submitted,  
**COOLEY GODWARD LLP**

By:

  
Christopher R. Hutter  
Reg. No. 41,087



Attorney Docket No. IMMR007/01US

PATENT

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**INFORMATION DISCLOSURE STATEMENT  
 UNDER 37 C.F.R. §1.97(c)**

In accordance with the duty of disclosure set forth in 37 C.F.R. §1.56,  
 Applicant(s) hereby submits the following information in conformance with 37 C.F.R.  
 §§1.97 and 1.98.

- Pursuant to 37 C.F.R. §1.98, a copy of each document cited in the attached Form PTO/SB/08A is provided on enclosed CD.
- No copies of the publications listed on the attached Form PTO/SB/08A are being provided pursuant to 37 C.F.R. §1.98(d) because the publications were previously cited by or submitted to the Office in prior Application Serial No. \_\_\_ to which the above-identified application claims priority under 35 U.S.C. §120.
- Publication(s) \_\_\_ listed on the attached Form PTO/SB/08A were cited in a foreign search or examination report corresponding to \_\_\_ application serial no. \_\_\_ and mailed on \_\_\_.
- Enclosed is a copy of a non-English publication(s) \_\_\_. Pursuant to §609 of the M.P.E.P., Applicant submits the attached foreign search or examination report, which cites such non-English language publication(s).
- Enclosed is a copy of a non-English publication(s) \_\_\_. English language publication \_\_\_ (copy enclosed) claims priority from this non-English publication.

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- Enclosed is an explanation of non-English publication(s) \_\_\_\_ for which an English translation is not available.
- Enclosed is an English translation of non-English publication(s) \_\_\_\_ cited in the attached Form PTO/SB/08A.
- Enclosed is a copy of pending patent Application Serial No. \_\_\_\_.

This Information Disclosure Statement is filed after the period specified in 37 C.F.R. § 1.97(b), but before the mailing of:

- a final action under 37 C.F.R. §1.113;
- a notice of allowance under 37 C.F.R. §1.311; or
- an action that otherwise closes prosecution in this application.

In accordance with 37 C.F.R. §1.97(c) also enclosed is:

- Fee under 37 C.F.R. §1.17(p) in the amount of \$180.00; or
- Statement as specified in 37 C.F.R. §1.97(e):
  - Each item of information contained in the Information Disclosure Statement cited herein was first cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing date of the Information Disclosure Statement; or
  - No item of information contained in the Information Disclosure Statement submitted herewith was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the undersigned, having made a reasonable inquiry, no item of information contained in the Information Disclosure Statement was known to any individual designated in 37 C.F.R. §1.56(c) more than three months prior to the filing date of the Information Disclosure Statement.

Attorney Docket No. IMMR-007/01US  
Serial No. 09/965,097  
Page 3

It is respectfully requested that the Examiner consider the above-noted information and return an initialed copy of the attached Form PTO/SB/08A to the undersigned.

Dated: August 30, 2004

Respectfully submitted,  
**COOLEY GODWARD LLP**

Cooley Godward LLP  
ATTN: Patent Group  
One Freedom Square  
Reston Town Center  
11951 Freedom Drive  
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Tel: (703) 456-8000  
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By:

  
Christopher R. Hutter  
Reg. No. 41,087

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PTO/SB/08A (10-01)

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## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet

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### Complete if Known

Application Number	09/965,097
Filing Date	September 28, 2001
First Named Inventor	David F. Moore
Art Unit	2673
Examiner Name	Xiao M. Wu
Attorney Docket Number	IMMR007/01US

<b>U.S. PATENT DOCUMENTS</b>					
Examiner	Cite No. <sup>1</sup>	Document Number Number Kind Code <sup>2</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		20030201975	10/30/03	Bailey et al.	
		20020030663	3/14/02	Tierling et al.	
		6,717,573	4/6/04	Shahoian et al.	
		6,707,443	3/16/04	Bruneau et al.	
		6,697,043	2/24/04	Shahoian et al.	
		6,585,595	7/1/03	Soma et al.	
		6,424,333	7/23/02	Tremblay et al.	
		6,422,941	7/23/2002	Thorner et al.	
		6,317,032	11/13/01	Oishi	
		6,275,213	8/14/01	Tremblay et al.	
		6,211,861	4/3/01	Rosenberg et al.	
		6,198,206	3/6/01	Saarmaa et al.	
		6,184,868	2/6/01	Shahoian et al.	
		6,160,489	12/12/2000	Perry et al.	
		6,111,577	8/29/2000	Zilles et al.	
		6,104,158	8/5/00	Jacobus et al.	
		6,088,019	7/11/00	Rosenberg	
		6,088,017	7/11/00	Tremblay et al.	
		6,078,126	6/20/00	Rollins et al.	
		6,044,646	4/4/00	Silverbrook	
		6,004,134	12/21/99	Marcus et al.	
		6,001,014	12/14/99	Ogata et al.	
		5,986,643	11/16/99	Harvill et al.	
		5,984,880	11/16/99	Lander et al.	
		5,973,670	10/26/99	Barber et al.	
		5,945,772	8/31/99	Macnak et al.	
		5,914,705	6/22/99	Johnson et al.	
		5,897,437	4/27/99	Nishiumi et al.	
		5,894,263	4/13/99	Shimakawa et al.	
		5,889,672	3/30/99	Schuler et al.	
		5,857,986	1/12/99	Moriyasu	
		5,805,140	9/8/98	Rosenberg et al.	
		5,790,108	8/4/98	Salcudean et al.	
		5,784,052	7/21/98	Keyson	

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SignatureDate  
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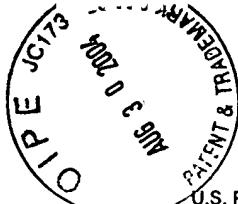
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<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> Kind Codes of U.S. Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

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## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet

**2**

of

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<i>Complete if Known</i>	
Application Number	<b>09/965,097</b>
Filing Date	September 28, 2001
First Named Inventor	David F. Moore
Art Unit	2673
Examiner Name	Xiao M. Wu
Attorney Docket Number	IMMR007/01US

<b>U.S. PATENT DOCUMENTS</b>				
Examiner	Cite No.	Document Number Number Kind Code <sup>2</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document
		5,781,172	7/14/98	Engel et al.
		5,754,023	5/19/98	Roston et al.
		5,742,278	4/21/98	Chen et al.
		5,739,811	4/14/98	Rosenberg et al.
		5,736,978	4/7/98	Hasser et al.
		5,734,373	3/31/98	Rosenberg et al.
		5,714,978	2/3/98	Yamanaka et al.
		5,709,219	1/20/98	Chen et al.
		5,690,582	11/25/1997	Ulrich et al.
		5,684,722	11/4/97	Thorner et al.
		5,669,818	9/23/97	Thorner et al.
		5,661,446	8/26/97	Anderson et al.
		5,643,087	7/1/97	Marcus et al.
		5,631,861	5/20/97	Kramer
		5,619,180	4/8/97	Massimino et al.
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		5,440,183	8/8/95	Denne
		5,437,607	8/1/1995	Taylor
		5,436,622	7/25/1995	Gutman et al.
		5,405,152	4/11/95	Katanics et al.
		5,399,091	3/21/95	Mitsumoto
		5,388,992	2/14/95	Franklin et al.
		5,354,162	10/11/94	Burdea et al.
		5,296,871	3/22/94	Paley
		5,283,970	2/8/1994	Aigner
		5,203,563	4/20/93	Loper, III
		5,186,695	2/16/1993	Mangseth et al.
		5,186,629	2/16/93	Rohen
		5,184,319	2/2/93	Kramer

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Sheet

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		5,175,459	12/29/1992	Danial et al.	
		5,165,897	11/24/1992	Johnson	
		5,146,566	9/8/92	Hollis, Jr. et al.	
		5,107,262	4/21/92	Cadoz et al.	
		5,103,404	4/7/92	McIntosh	
		5,022,384	6/11/1991	Freels	
		4,885,565	12/5/1989	Embach	
		4,868,549	9/19/89	Affinito et al.	
		4,795,296	1/3/89	Jau	
		4,731,603	3/15/88	McRae et al.	
		4,706,294	11/10/87	Ouchida	
		4,484,191	11/20/1984	Vavra	
		4,464,117	8/7/1984	Foerst	
		4,414,984	11/15/83	Zarudiansky	
		4,333,070	6/1/1982	Barnes	
		4,262,549	4/21/1981	Schwellenbach	
		4,127,752	11/28/1978	Lowthorp	
		3,919,691	11/11/75	Noll	
		2,972,140	2/14/1961	Hirsch	
		RE37,374	9/18/01	Roston et al.	

Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document			Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Country Code <sup>3</sup>	Number <sup>4</sup>	Kind Code <sup>5</sup> (if known)			
		JP	H2-185278		7/19/1990	Taito Corporation	
		JP	H4-8381		1/13/1992	Epoch Co. and Key-Planning Co.	
		JP	H7-24147		1/27/1995	Sega Corporation	
		JP	H5-192449		8/3/1993	Taito Corporation	
		WO	92/00559		1/9/1992		
		EP	0607580	A1	7/27/1994		
		EP	0265011		4/27/1988		
		EP	0626634	A2	5/11/1994		

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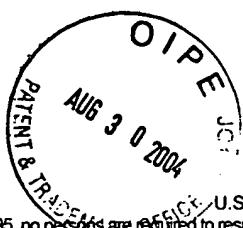
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Examiner Signature	Date Considered
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		WO	01/03105		1/11/2001		
		WO	01/24158		4/5/2001		
		WO	97/31333		8/28/1997		
		WO	01/13354		2/22/2001		
		WO	98/32112		7/23/19.98		
		WO	99/40504		12/8/1999		
		WO	02/27705		4/4/2002		

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				Examiner Name	Xiao M. Wu
Sheet	5	of	7	Attorney Docket Number	IMMR007/01US

## OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
		PATRICK, "Design, Construction, and Testing of a Fingertip Tactile Display for Interaction with Virtual and Remote Environments," <i>Master of Science Thesis</i> , MIT, Aug. 1990, archived Nov. 8, 1990.
		CALDER, "Design of A Force-Feedback Touch-Introducing Actuator For Teleoperator Robot Control," <i>Bachelor of Science Thesis</i> , MIT, May 1983, archived June 23, 1983.
		WIKER, "Teletouch Display Development: Phase 1 Report," <i>Technical Report 1230</i> , Naval Ocean Systems Center, San Diego, July 1988.
		BLISS, "Optical-to-Tactile Image Conversion for the Blind," <i>IEEE Transactions on Man-Machine Systems</i> , Vol. MMS-11, No. 1, March 1970.
		JOHNSON, "Shape-Memory Alloy Tactile Feedback Actuator," <i>Armstrong Aerospace Medical Research Laboratory, AAMRL-TR-90-039</i> , August, 1990.
		KONTARINIS et al., "Tactile Display of Vibratory Information in Teleoperation and Virtual Environments," <i>PRESENCE</i> , 4(4):387-402, Harvard Univ., 1995.
		AUKSTAKALNIS et al., "Silicon Mirage: The Art and Science of Virtual Reality," ISBN 0-938151-82-7, pp. 129-180, 1992.
		EBERHARDT et al., "Inducing Dynamic Haptic Perception by The Hand: System Description and Some Results," <i>DSC-Vol. 55-1, Dynamic Systems and Control: Volume 1</i> , ASME 1994.
		GOBEL et al., "Tactile Feedback Applied to Computer Mice," <i>International Journal of Human-Computer Interaction</i> , Vol. 7, No. 1, pp. 1-24, 1995.
		PIMENTEL et al., "Virtual Reality: through the new looking glass," 2 <sup>nd</sup> Edition; McGraw-Hill, ISBN 0-07-050167-X, pp. 41-202, 1994.
		"Cyberman Technical Specification," <i>Logitech Cyberman SWIFT Supplement to Logitech Mouse Technical Reference and Programming Guide</i> , 4/5/1994.
		OUHYOUNG et al., "The Development of A Low-Cost Force Feedback Joystick and Its Use in the Virtual Reality Environment," <i>Proceedings of the Third Pacific Conference on Computer Graphics and Applications, Pacific Graphics '95</i> , Seoul, Korea, 21-24 August 1995.
		KACZMAREK et al., "Tactile Displays," <i>Virtual Environment Technologies</i> , Chap. 9, pp. 349-414.
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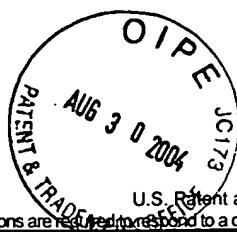
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of

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Application Number	09/965,097
Filing Date	September 28, 2001
First Named Inventor	David F. Moore
Art Unit	2673
Examiner Name	Xiao M. Wu
Attorney Docket Number	IMMR007/01US

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS		
Examiner Initials *	Cite No. <sup>1</sup>	
		Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
		"Technical Manual Overhaul Instructions With Parts Breakdown, Coaxial Control Shaker Part no. C-25502," Safe Flight Instrument Corporation, Revised 15 July 1980 (23 pages).
		SCANNELL, "Taking a Joystick Ride," Computer Currents, Boston Edition, Vol. 9, No. 11, November 1994
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		KIM, Won, "Telemanipulator Technology and Space Telerobotics," SPIE Proceedings, 1993, Vol. 2057, pp. 40-50.	

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